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A4F FFBL

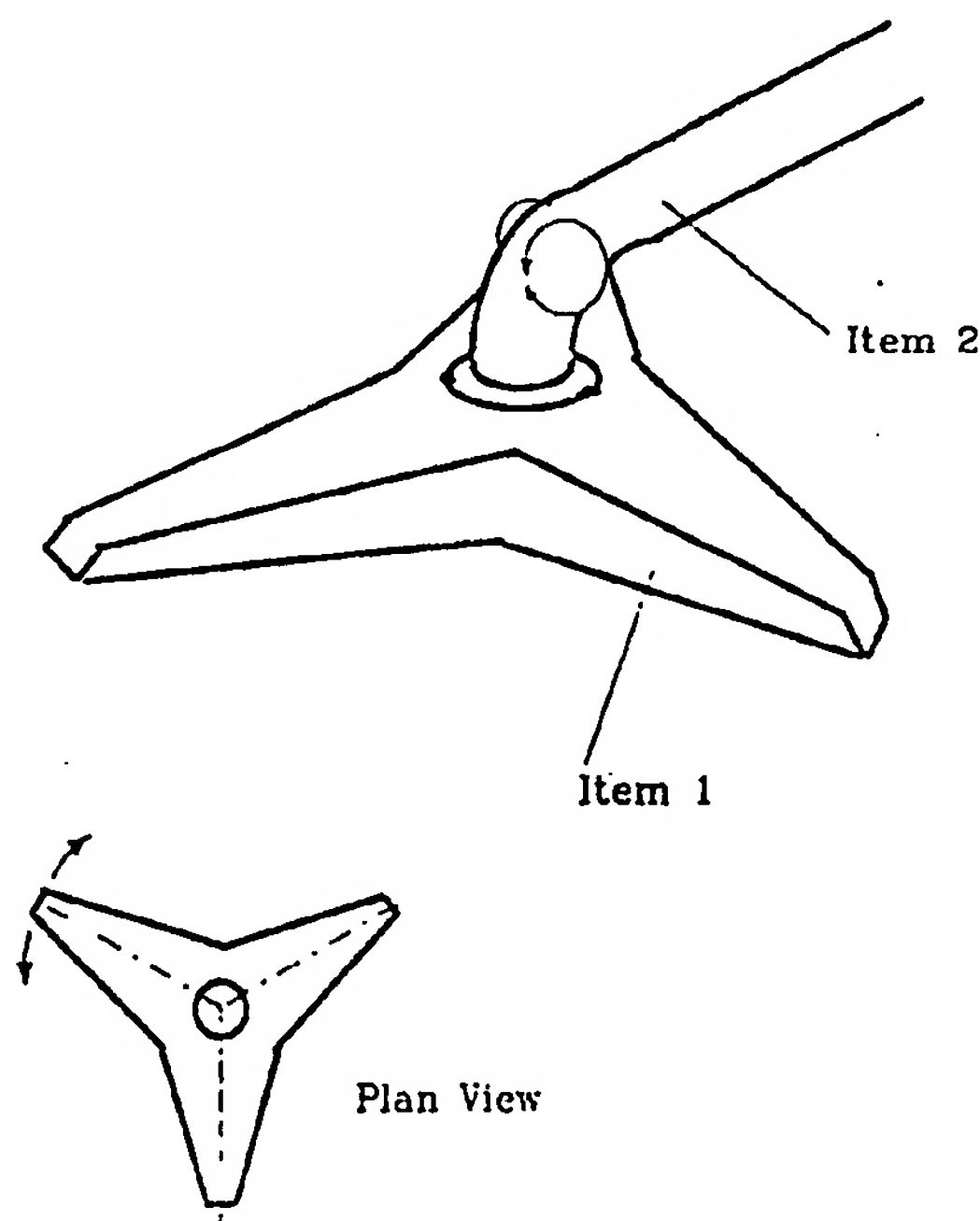
(56) Documents cited
GB 0488397 A GB 0483441 A

(58) Field of search
UK CL (Edition J) A4F FD FFBL
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(54) Vacuum cleaner nozzle

(57) A vacuum cleaner nozzle has a three-armed symmetrical shape. A vacuum suction pipe may be connected pivotably to the nozzle. This allows full rotation of the nozzle whilst maintaining an approximately constant cleaning width, reduces cleaning movements (as compared with the traditional oblong design), and also allows the nozzle to ride, hence clean, around obstacles such as table and chair legs and clean efficiently into corners.

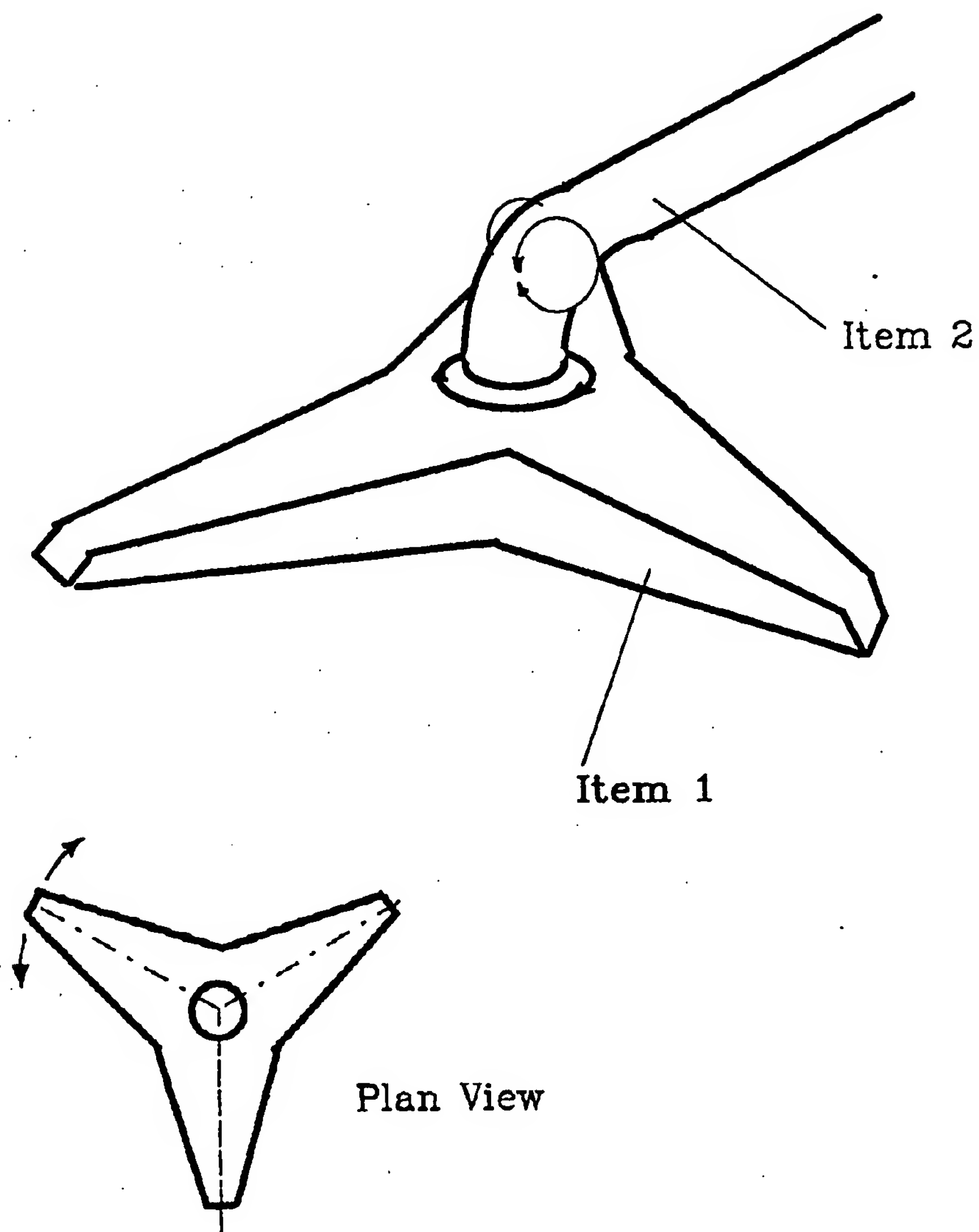
Figure 1
3-d View of Nozzle



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Figure 1
3-d View of Nozzle

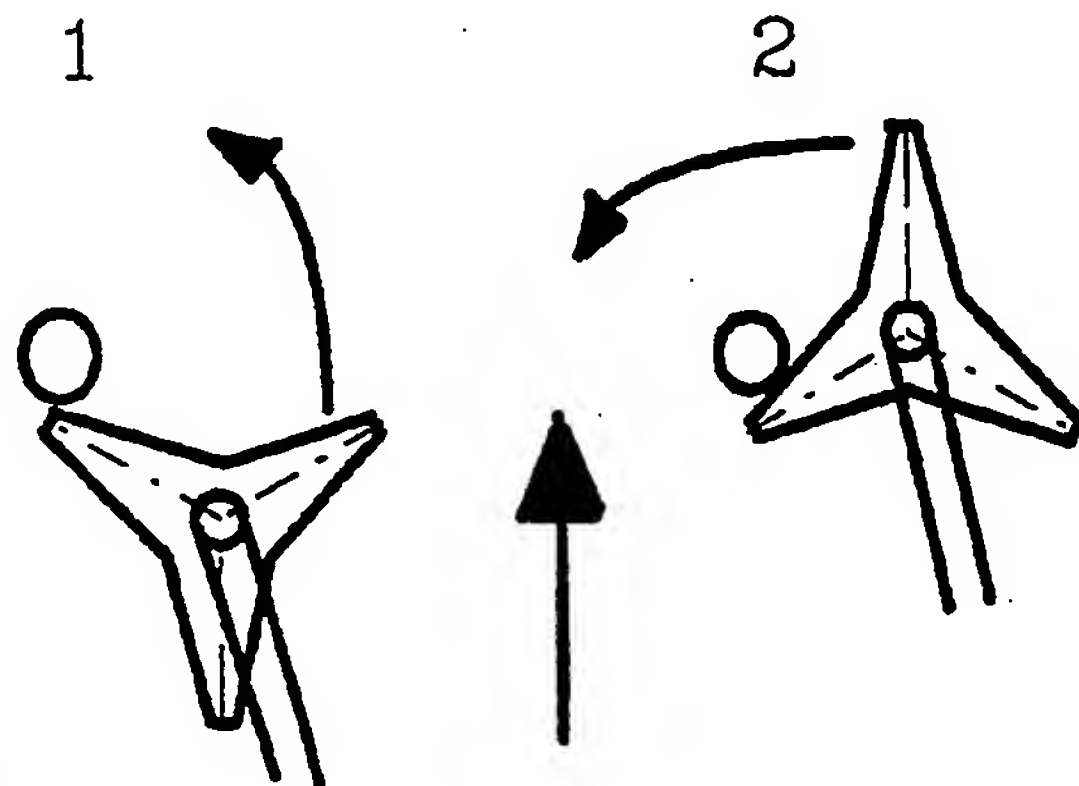


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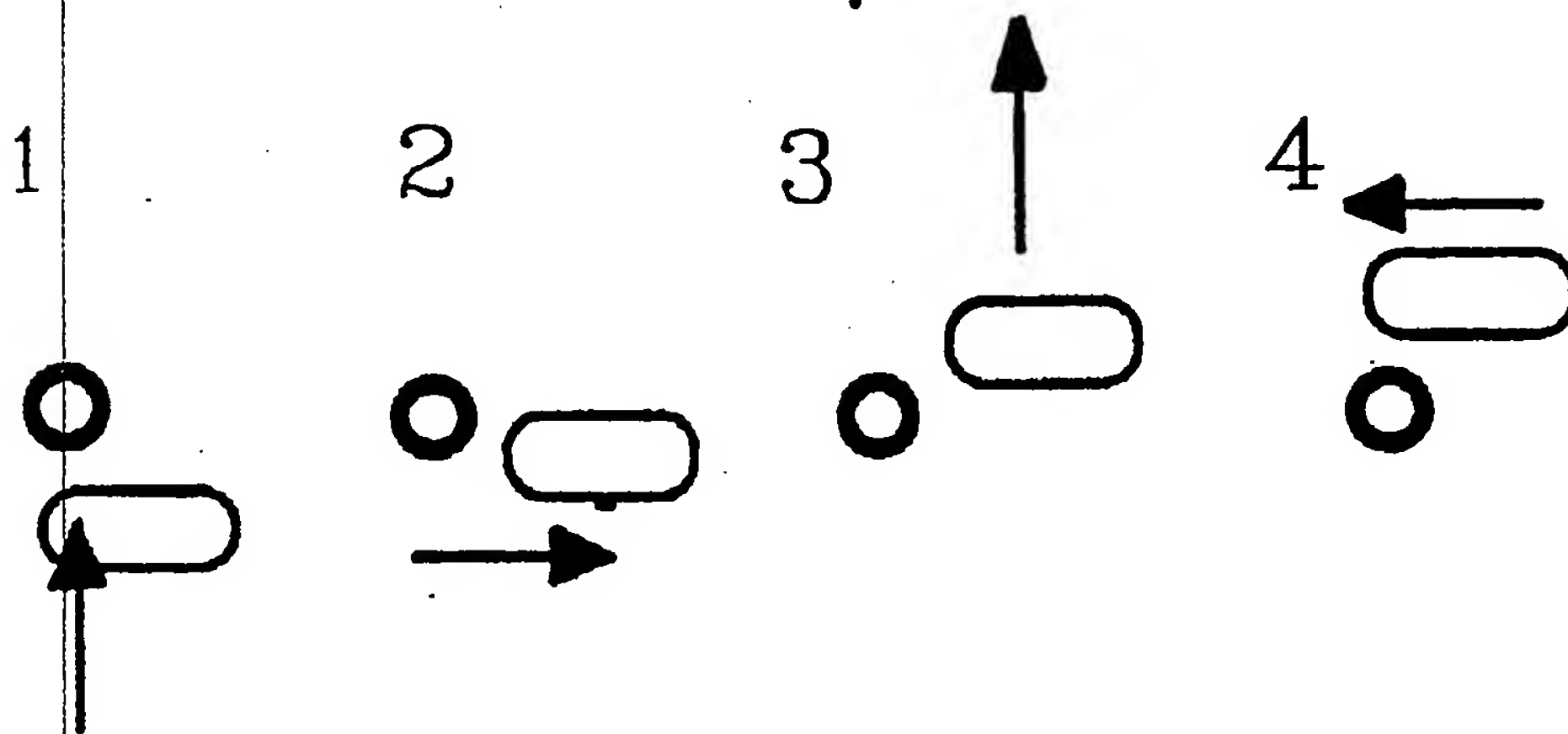
Figure 2

Movement around legs

New Shape movement



Traditional shape movement

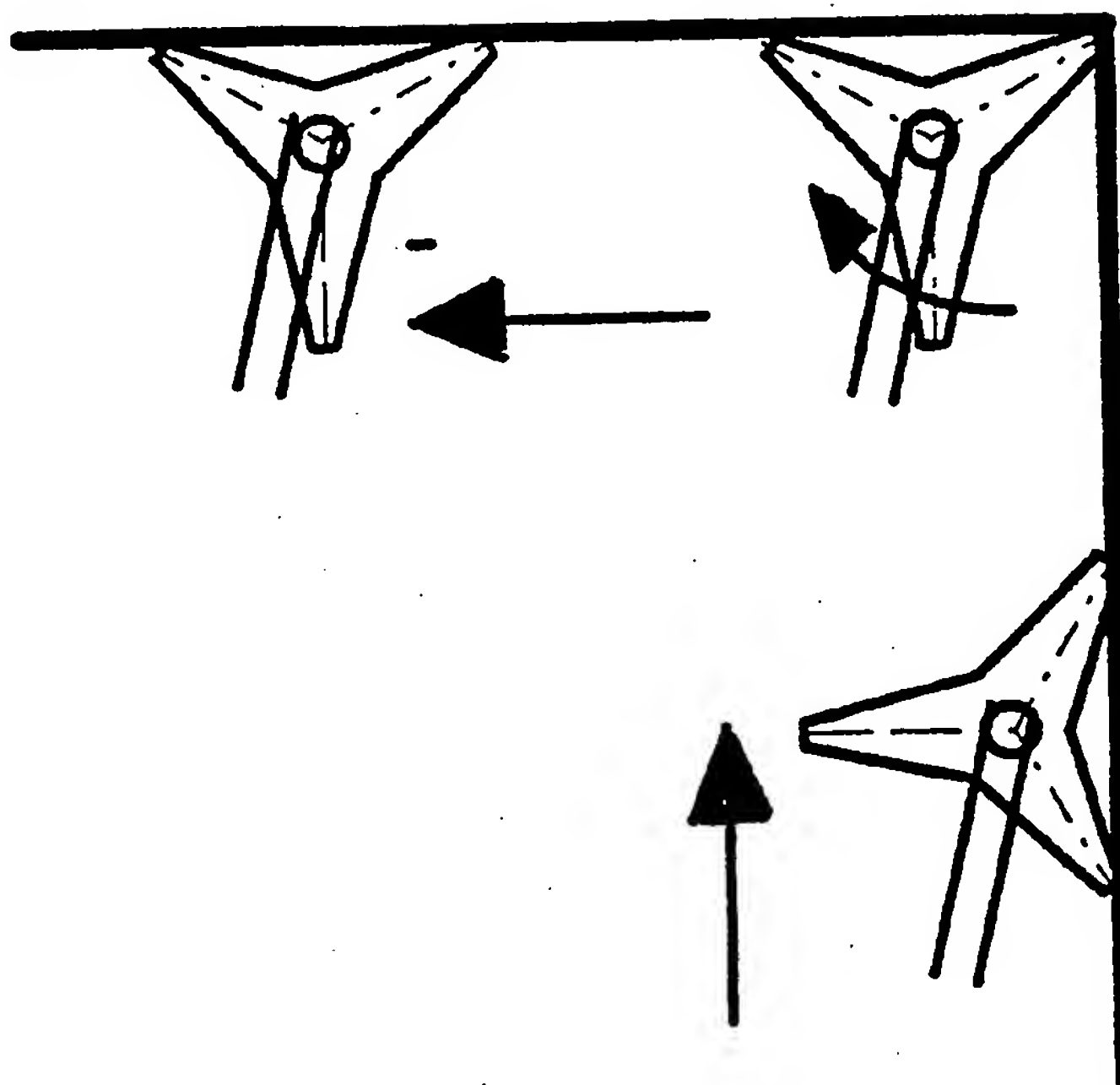


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Figure 3

Movement in corners

New Shape movement



Traditional shape movement

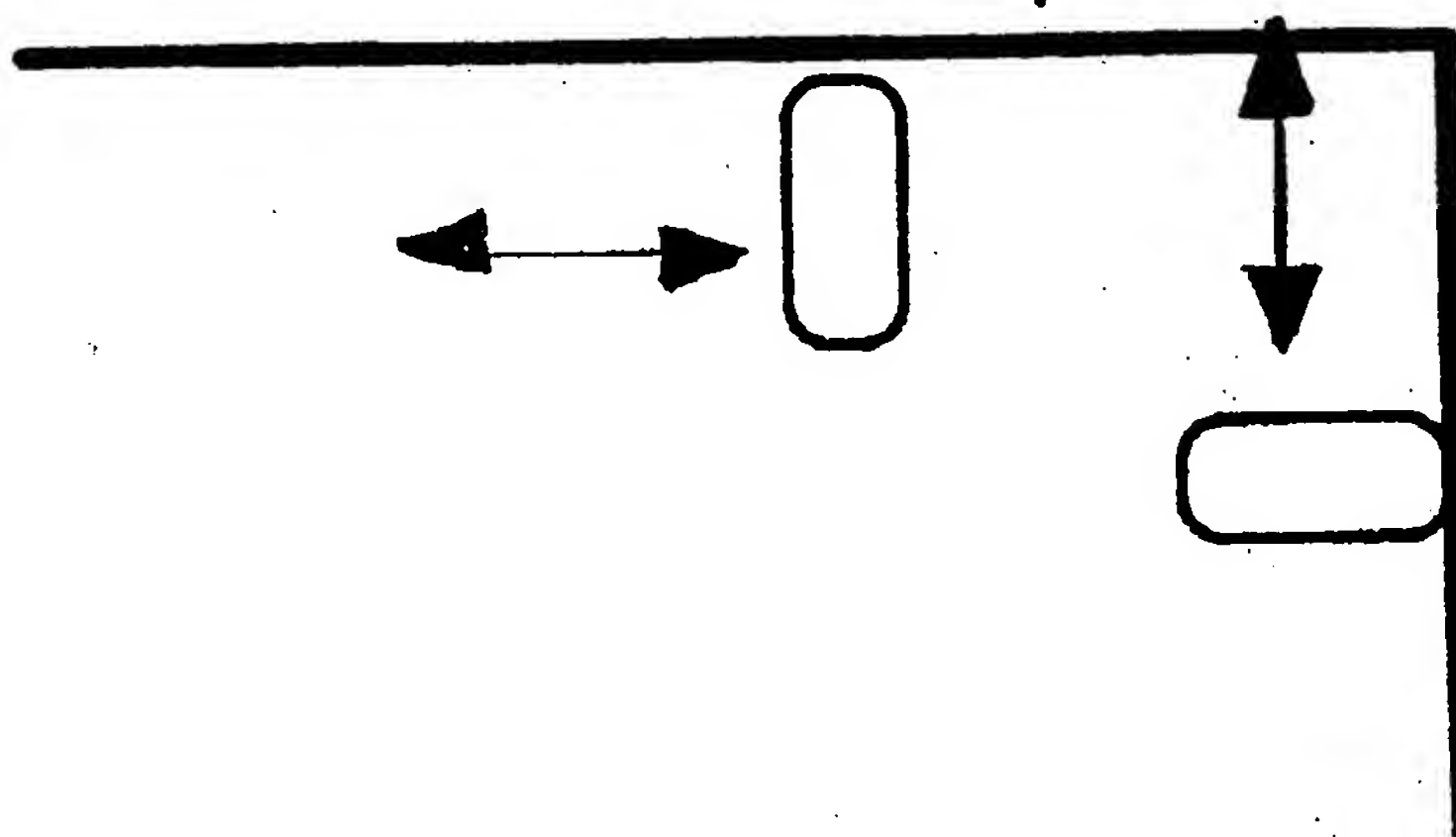


Figure 4

Brushes

Shown thus -----

Brushes only
shown for one
leg. Other legs
identical
or
similar

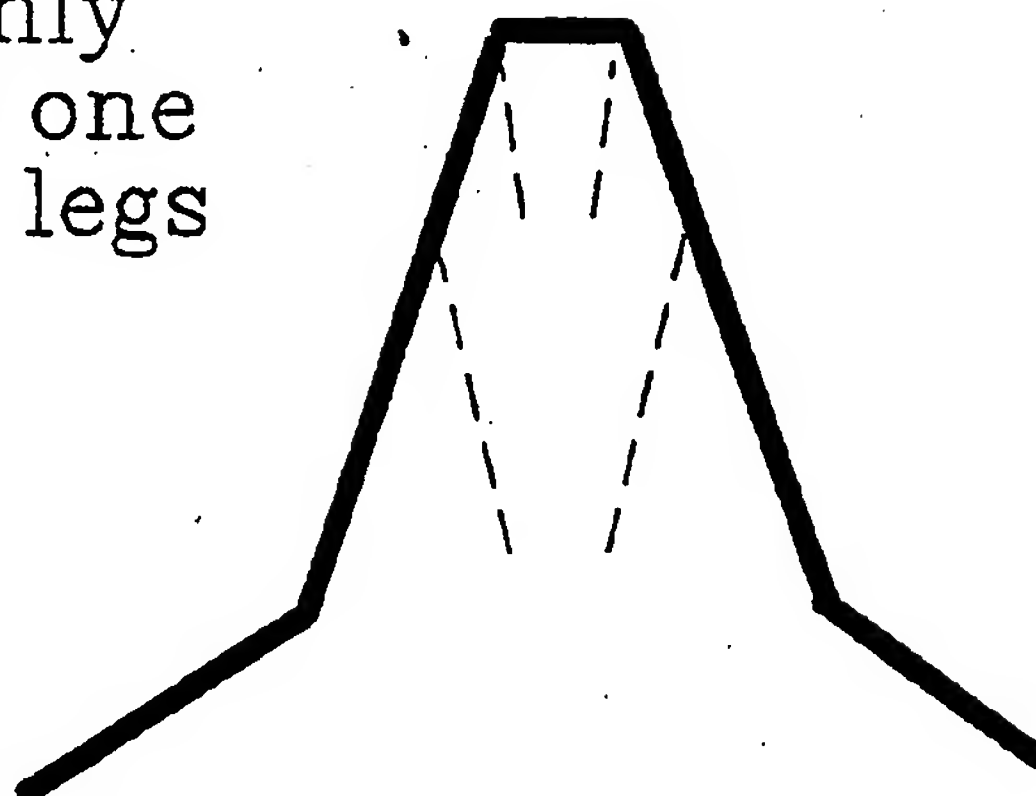
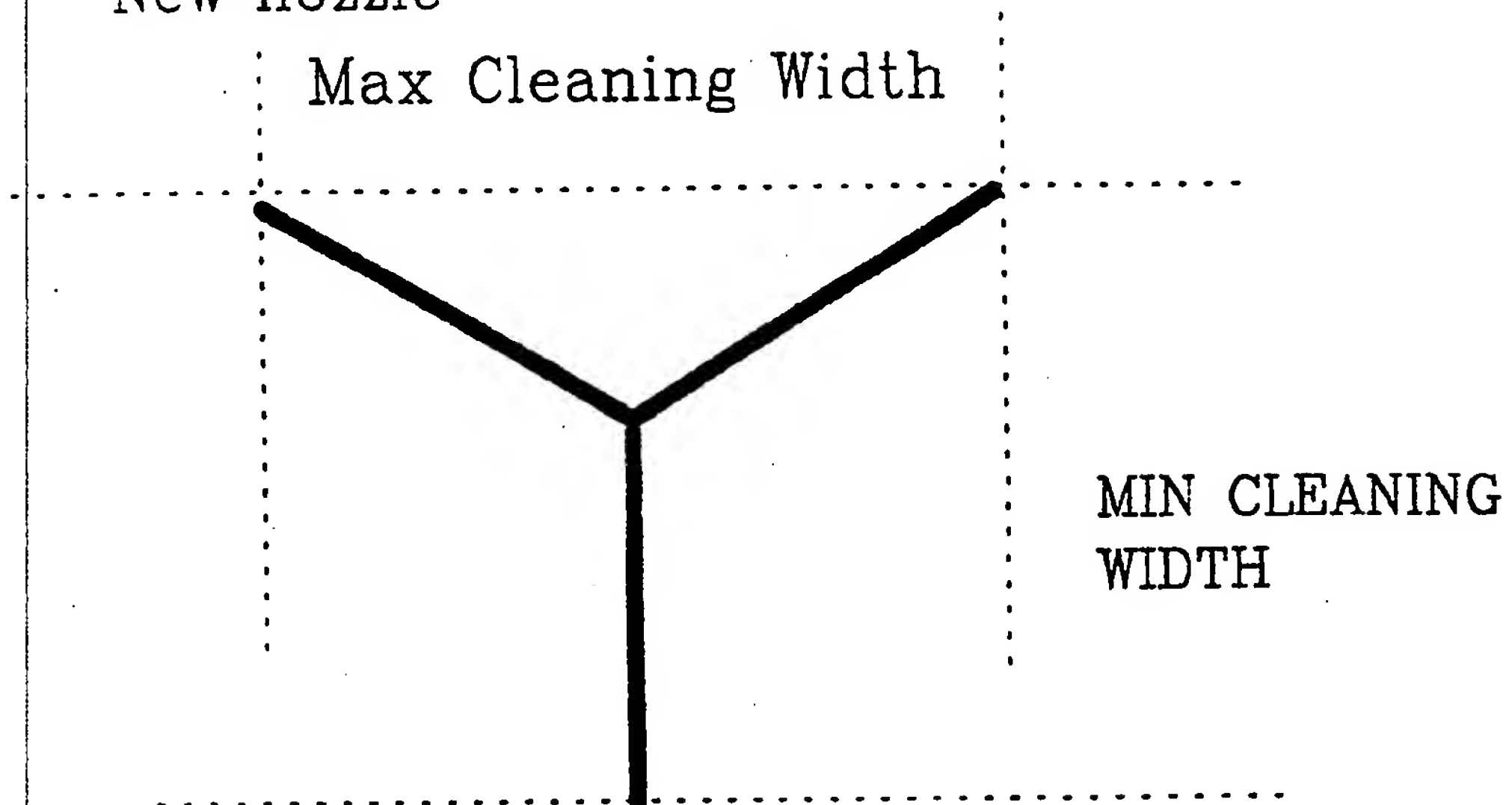


Figure 5

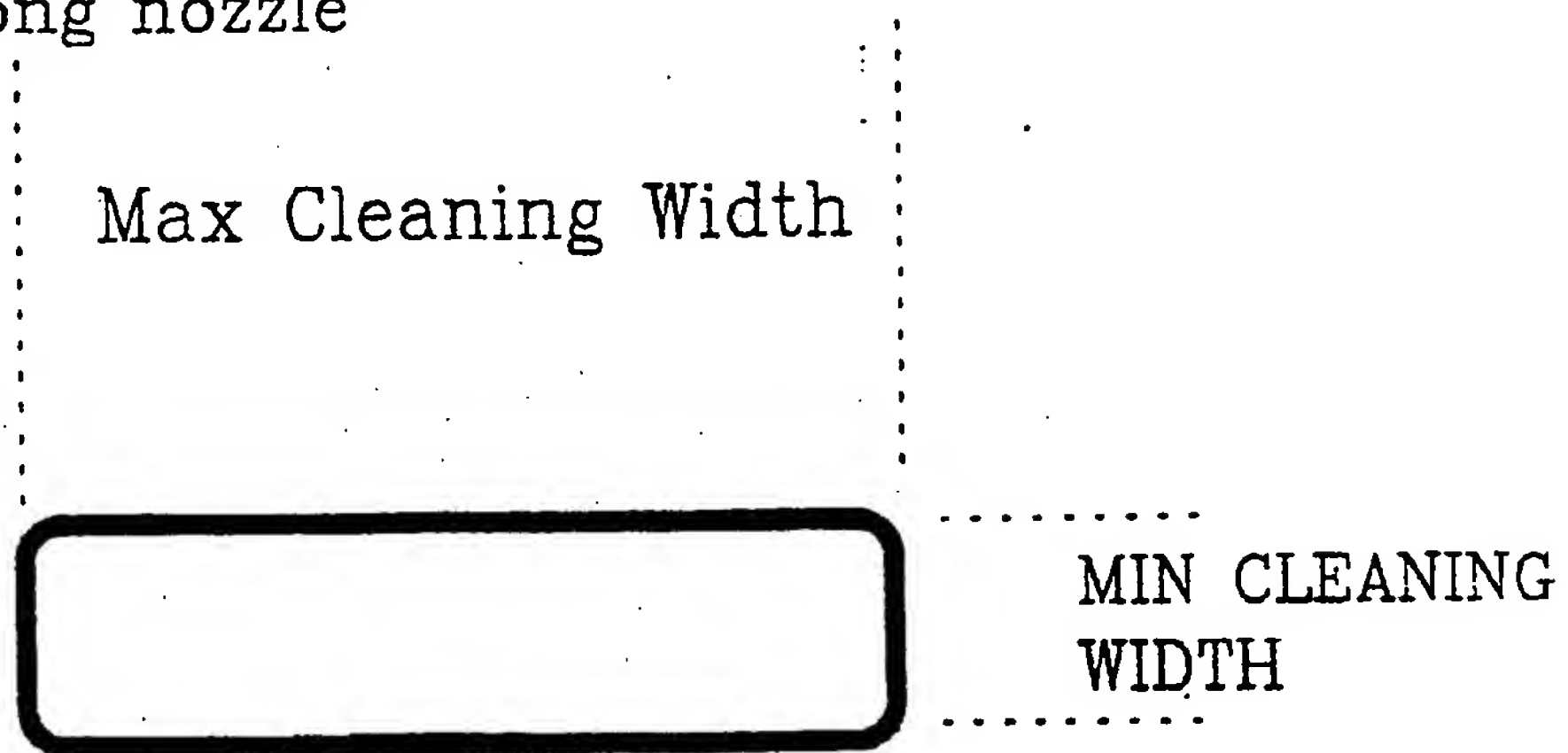
New nozzle

Max Cleaning Width



Oblong nozzle

Max Cleaning Width

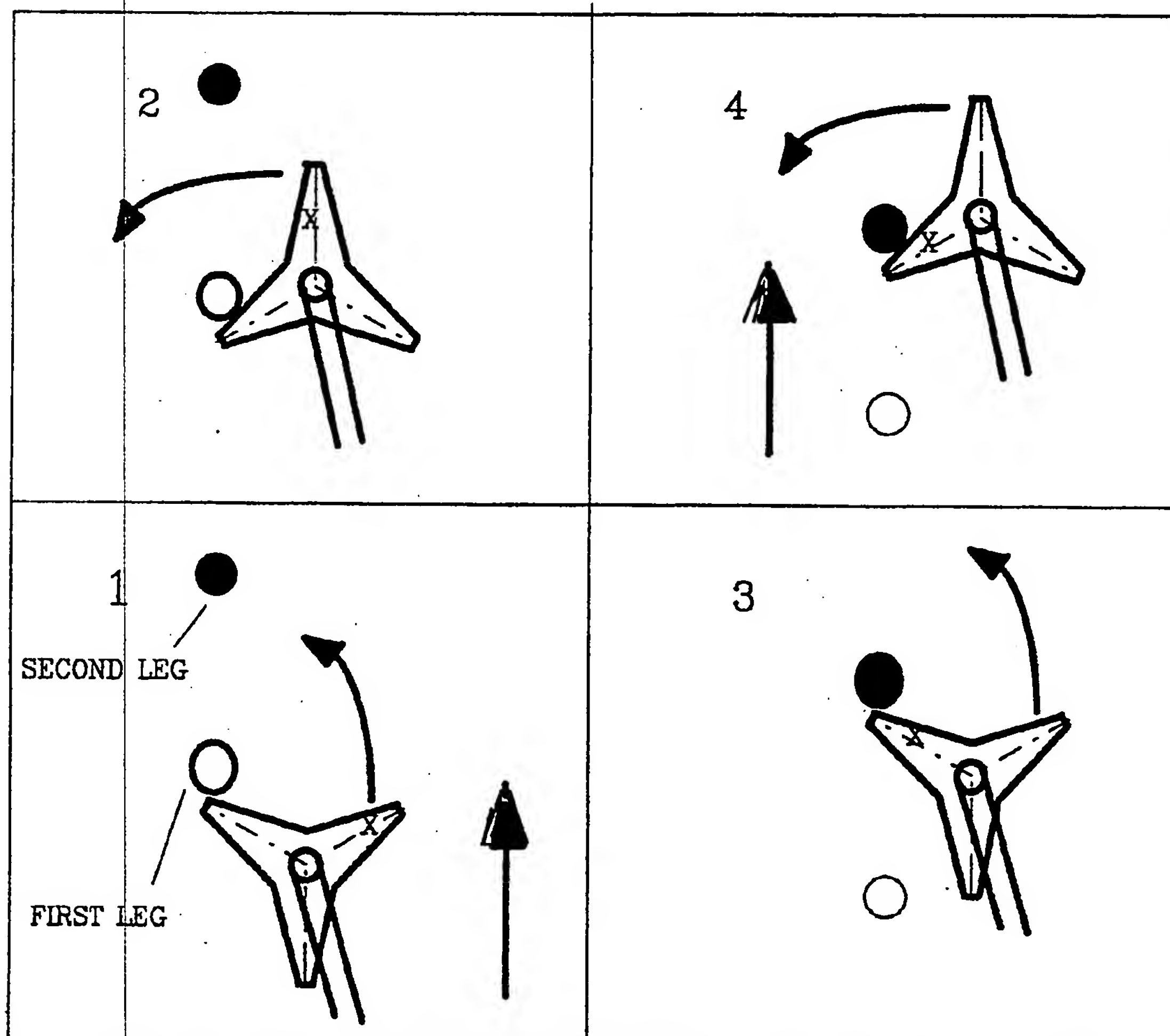


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Figure 6

Movement around legs

'Meshing' action



VACUUM CLEANER NOZZLE

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TECHNICAL FIELD

This invention relates to a vacuum cleaner nozzle.

BACKGROUND

The oblong shape of the conventional vacuum cleaner nozzle is adequate for most cleaning purposes, but requires a lot of movements to clean around table legs and into corners etc. The current designs are also fixed in the horizontal direction to ensure that the maximum width is always presented to the cleaning path (although the angled swivel pipe does allow for some twisting movement). This new invention was designed to overcome these problems by allowing the nozzle to rotate fully and shaped to ride around obstacles and fit into corners.

TECHNICAL FEATURES

According to the present invention there is a vacuum cleaner nozzle which has three 'arms' of similar length, Figure 1 (the arms may vary in shape from star shaped to a general triangular shape). The vacuum suction pipe (i.e. the pipe held by the user) connected to the centre of the nozzle is jointed to allow an up and down movement of the vacuum pipe. The nozzle can also rotate fully, which enables it to ride around obstacles such as chair legs and efficiently clean into corners. The combination of these features allows the full rotation of the nozzle without loss of cleaning area when compared with the rectangular movements with the traditional oblong design.

The internal structure of the design will be semi-hollow in nature with a brush mechanism which can raised or lowered for different floor conditions. It was found that mounting the brushes at angles (Figure 4) optimises the brushing effect and guides the freed dirt into the centre of the nozzle.

EXAMPLE

A specific embodiment of the invention is now described by way of an example with reference to the accompanying drawings in which:

Figure 1 shows, in perspective, the nozzle with a suction pipe connected. The shape is typical of the final design envisaged. The final shape may vary depending on the aesthetics and dirt pick-up efficiency. Although the arms are shown equal in length, this is not a definite requisite of this design.

Figures 2 and 3 illustrate the advantages of the new shape over the traditional oblong shape.

Figure 4 illustrates how the brushes are mounted at angles to optimise the brushing effect and guide the freed dirt into the centre of the nozzle.

Figure 5 identifies the cleaning width advantage of the new shape compared with the traditional oblong shape.

In the new design the nozzle can rotate a fully. This allows the nozzle to 'ride' around objects (Figure 2), such as table and chair legs without the extra movements required by the oblong nozzle. A similar saving in movement is also made in corners (Figure 3).

The brushes need to be positioned in the way shown in Figure 4 to optimise the brushing effect for all directions of movement. In addition, the angle of the brushes help to 'focus' the movement of the released dirt particles into the centre of the nozzle.

Figure 5 shows the maximum and minimum cleaning widths for both the new and oblong nozzle designs. It is the shape of the new nozzle which allows the cleaning width to be maintained.

Figure 6 shows the 'meshing' movement as the nozzle rides around the legs of a table or chair, for example.

In comparison tests, the suction efficiency of the three-armed shape is greater than that of the oblong design for a given cleaning width. Also, the new design was found to be more effective in picking up larger objects than the standard oblong shape.

CLAIMS

1. A new shape of vacuum cleaner nozzle as shown in Figure 1 which has a shape consisting of three arms, typically symmetrically spaced, and the vacuum pipe connected at or near the centre.
2. A new mechanism of the vacuum cleaner nozzle in Claim 1 wherein the nozzle head can rotate to improve cleaning efficiency around objects such as chair legs and into corners.
3. A new mechanism of the vacuum cleaner nozzle in Claim 1 wherein the brushes are mounted at angles (Figure 4) to optimise the brushing effect and guide the freed dirt into the centre of the nozzle. Although, not an essential design element of the overall design.

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